

# PATENT COOPERATION TREATY

## PCT

### INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY (Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference <b>AP101496V312</b>	<b>FOR FURTHER ACTION</b> See Form PCT/IPEA/416	
International application No. <b>PCT/FI 2003/000951</b>	International filing date (day/month/year) <b>15.12.2003</b>	Priority date (day/month/year) <b>19.12.2002</b>
International Patent Classification (IPC) or national classification and IPC <b>D21F 5/04</b>		
Applicant <b>METSO PAPER, INC. et al</b>		

1.	This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.
2.	This REPORT consists of a total of <u>5</u> sheets, including this cover sheet.
3.	This report is also accompanied by ANNEXES, comprising: <div style="margin-left: 20px;">           a. <input type="checkbox"/> (sent to the applicant and to the International Bureau) a total of _____ sheets, as follows:           <div style="margin-left: 20px;"> <input type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).  <input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.           </div> </div> <div style="margin-left: 20px;">           b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).         </div>
4.	This report contains indications relating to the following items: <div style="margin-left: 20px;"> <input checked="" type="checkbox"/> Box No. I      Basis of the report  <input type="checkbox"/> Box No. II      Priority  <input type="checkbox"/> Box No. III      Non-establishment of opinion with regard to novelty, inventive step and industrial applicability  <input type="checkbox"/> Box No. IV      Lack of unity of invention  <input checked="" type="checkbox"/> Box No. V      Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement  <input type="checkbox"/> Box No. VI      Certain documents cited  <input type="checkbox"/> Box No. VII      Certain defects in the international application  <input type="checkbox"/> Box No. VIII      Certain observations on the international application         </div>

Date of submission of the demand  <b>27.05.2004</b>	Date of completion of this report  <b>22.03.2005</b>
Name and mailing address of the IPEA/SE Patent- och registreringsverket Box 5055 S-102 42 STOCKHOLM Facsimile No. +46 8 667 72 88	Authorized officer  <b>Susanna Lindfors/MP</b> Telephone No. +46 8 782 25 00

# INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/FI 2003/000951

## Box No. I Basis of the report

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.

- ☐ This report is based on a translation from the original language into the following language \_\_\_\_\_, which is the language of a translation furnished for the purposes of:
- ☐ international search (under Rules 12.3 and 23.1(b))
  - ☐ publication of the international application (under Rule 12.4)
  - ☐ international preliminary examination (under Rules 55.2 and/or 55.3)

2. With regard to the **elements** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

- ☒ the international application as originally filed/furnished
- ☐ the description:
- pages \_\_\_\_\_ as originally filed/furnished
- pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
- pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
- ☐ the claims:
- pages \_\_\_\_\_ as originally filed/furnished
- pages\* \_\_\_\_\_ as amended (together with any statement) under Article 19
- pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
- pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
- ☐ the drawings:
- pages \_\_\_\_\_ as originally filed/furnished
- pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
- pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
- ☐ a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.

3. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages \_\_\_\_\_
- ☐ the claims, Nos. \_\_\_\_\_
- ☐ the drawings, sheets/figs \_\_\_\_\_
- ☐ the sequence listing (*specify*): \_\_\_\_\_
- ☐ any table(s) related to the sequence listing (*specify*): \_\_\_\_\_

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

- ☐ the description, pages \_\_\_\_\_
- ☐ the claims, Nos. \_\_\_\_\_
- ☐ the drawings, sheets/figs \_\_\_\_\_
- ☐ the sequence listing (*specify*): \_\_\_\_\_
- ☐ any table(s) related to the sequence listing (*specify*): \_\_\_\_\_

\* If item 4 applies, some or all of those sheets may be marked "superseded."

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

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**Box No. V** Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

## 1. Statement

Novelty (N)	Claims	<u>1 - 9</u>	YES
	Claims		NO
Inventive step (IS)	Claims		YES
	Claims	<u>1 - 9</u>	NO
Industrial applicability (IA)	Claims	<u>1 - 9</u>	YES
	Claims		NO

## 2. Citations and explanations (Rule 70.7)

The invention refers to an arrangement in connection with a papermaking fabric for supporting and stabilizing the paper web with a blow box, which easily fits into a cylinder pocket.

Reference is made to the following documents:

D1: US 4553340 A  
D2: US 6189232 B1

D1 discloses a sealing device in a cylinder drier comprising a blowing box (10) and a shielding member (7), which create a sub-pressure in the area at the nip (A) in order to avoid the paper web lifting from the wire.

The shielding member (7) described in D1 is considered to be equivalent to the wall referred to in claim 1. From figure 1 in D1, it is clear that the proportion between the height of the shielding member (7) and the height of the blow box (10) is within the broad interval defined in claim 1.

Similar to the invention, a sub pressure is formed in the area between the opening nip and the closing nip in the arrangement described in D1, due to the blowing of air in the direction towards the travelling direction of the web and the arrangement of the shielding member (7).

The invention according to claim 1 differs from D1 in that a boundary layer air doctor has been arranged in the second edge of the wall.

This distinguishing feature gives rise to an even larger sub

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## Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of: BOX V

pressure. The problem to be solved by the present invention can be seen as to provide a larger sub pressure in the area between the opening nip and the closing nip.

It is well known in the art to seal a blow box, which blows air in the direction of the travel of the web as described in D1, against the lowest cylinder in the pocket in order to create a sub pressure in the area between the opening nip and the closing nip following it, see for example D2. Thus, it is considered obvious to a person skilled in the art to seal the free end (8) of the shielding member described in D1 against the lower cylinder in order to increase the sub pressure in the area between the opening nip and the closing nip. The use of a boundary layer air doctor as sealing element is considered to be an obvious choice to a person skilled in the art.

Consequently, the arrangement according to claim 1 is considered to be obvious to a person skilled in the art. Similarly, the paper machine according to claim 9 is considered to lack an inventive step.

The subject matter according to claim 2 differs from the arrangement disclosed in D1 in that the height of the wall in the travelling direction of the paper web is 50 - 150 % of the height of the blow box.

From figure 1 in D1, it is clear that the height of the shielding member (7) is significantly greater than the height of the blow box in the travelling direction of the paper web. It is considered obvious to a person skilled in the art to dimension the blowbox and the shielding member appropriately.

Consequently, the arrangement according to claim 2 is considered to be obvious to a person skilled in the art. Similarly, the arrangement according to claim 3 is considered to be obvious to a person skilled in the art.

The arrangement according to claim 6 is also considered to be obvious to a person skilled in the art, since it is well known in the art to arrange, in connection with a blow box, a flexible nozzle wall that bends elastically in fault

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**Supplemental Box**

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situations.

The subject matters of claims 4, 5, 7 and 8 are considered to define constructional details obvious to a person skilled in the art.

Consequently, the invention according to claims 1 - 9 is novel, but considered to lack an inventive step. The invention fulfils the requirement of industrial applicability.